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Refereed papers

Information management in primary care: delivering a strategy to improve patient care in Scotland

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Introduction: the consultation

The heart of general practice is the interaction between doctor and patient about an acute or chronic problem. Computer technology has advanced rapidly, and in order for computers to be helpful in the consultation, it is essential that there is clinical input to the development process. Programmes must take account of all relevant guidelines and quality criteria, and be informed by the pattern of the likely clinical consultation for different presentations and problems.

Problem: too many guidelines

The concept of clinical governance for general practice has coincided with a huge proliferation of initiatives and publications that aim to aid doctors and nurses working in primary care to establish and demonstrate a high standard of care for their patients. Scottish Intercollegiate Guidelines Network (SIGN), Quality Initiatives from the Royal College of General Practitioners (RCGP), and prescribing and referral guidelines from hospital specialties are being produced at a phenomenal rate. One measure of the volume of paperwork available to general practitioners (GPs) in the form of 'guidelines' was estimated at 850 in 1998.[1] Many believe that it is impractical to expect GPs to read and familiarise themselves with the volume of paperwork that encompasses all the protocols that they might need. Computer-aided management can be utilised to implement guidelines and quality standards within the consultation. GPs in England can use the PRODIGY system, a guideline-based decision support system developed at Newcastle University, but there is no overall national policy.[2]

Background

Primary care computing has developed steadily in Scotland and, by 1998, some 80% of practices were equipped with the General Practice Administration System for Scotland (GPASS). Information Management and Technology (IM&T) is expected to support the clinical process, and many groups within primary care (GPASS User Group, RCGP Scotland, Aberdeen University) have been collaborating to address the challenges of delivering the quality agenda in Scottish primary care.[3] A conference was held in June 1999 entitled 'Making the Best Use of your Computer' and was attended by all the user groups of the major software systems used by GPs in Scotland. There was widespread agreement to establish a Scottish standard for the recording, implementation and comparison of markers of care in general practice, in order to ensure consistent information, monitor performance and take forward the clinical governance agenda. If clinicians could agree on common standards for chronic disease management in primary care, an opportunity existed

to demonstrate and compare standards across the whole of Scotland, influence effectiveness of care, and improve the quality of care to individual patients.

Scottish Clinical Information Management in Primary Care (SCIMP)

A group was set up to act as a central point of contact for everyone wishing to contribute to the debate on selection of agreed standards and protocols. It included user representatives from the five software systems used by Scottish practices (GPASS, EMIS, Vision, Torex and Exeter), Colleges (RCGP), medical politicians (SGPC), and guideline developers (SIGN), and was supported by the Scottish Executive Health Department (SEHD).

The aims of the group were to simplify access to relevant information in order to make it easier for clinicians to do the right thing within the consultation, to publicise the benefits of a co-ordinated and shared approach, and assess the utility of reporting and comparative tools.

The SEHD has a longstanding IM&T strategy that aims to optimise the use of IM&T throughout the National Health Service (NHS) in Scotland.[3] It aims to support clinicians in choosing best practice by giving easy access to professionally approved care guidelines, and the aims of SCIMP are to provide clinical input to these aspirations (see Box 1).

The software: avoidance of information chaos?

The development of agreed core datasets is essential. The Primary Care Clinical Effectiveness Programme, hosted by the RCGP in Scotland, aims to produce national criteria for clinical areas where there is good evidence of what is good practice. SPICE PC is the Scottish Programme for Improving Clinical Effectiveness in Primary Care, and has defined sets of minimum criteria for chronic disease care, which are incorporated into 'care management screens' (CMSs). GPASS is the software system designed and developed by the Scottish Executive for use in practices in Scotland, and it is currently used by over 80% of Scottish practices. CMSs are data entry screens, which can be configured at practice level to record acute or chronic disease care. The other 20% of Scottish GPs use other GP software systems (EMIS, Exeter, Torex and Vision), all of which have developed similar facilities.[4] The CMSs can present the clinician with a checklist of minimum care criteria, which remind GPs of essential elements of the consultation. Similarly, CMSs can also empower nurses to deliver predetermined high-quality care as an integrated part of the practice team. Practice nurses use templates for the management of asthma and diabetes frequently, but GPs more rarely, although both nurses and GPs are favourably disposed towards the use of templates for general clinical care.[5] By incorporating SIGN guidelines and quality criteria into the CMSs, clinical governance can be delivered as a by-product of the consultation process, and not as an additional activity. Reporting and audit can become an automatic process that happens as a result of information generated during a normal consultation.

Successful delivery of clinical governance and quality initiatives is critically dependent on the quality and standardisation of the routine information available. The SPICE criteria have been developed by RCGP Scotland Quality Initiatives Group to meet the needs of the clinical process, the needs of local and regional management, and to facilitate meaningful electronic communication of clinical information between primary and secondary care.[6] The alternative is to leave individual practices to invent their own dataset that will become idiosyncratic and hence useless for

Box 1 The aims of SEHD and SCIMP

Aims of SEHD IM&T strategy

- Ensure continuity and co-ordination of patient records between primary and secondary care
- Ensure accuracy and avoid the need repeatedly to obtain the same information
- Support clinicians by giving easy access to professionally approved care guidelines
- Offer alerts and reminders
- Allow clinicians to audit their performance and that of their peers by comparing like with like

Aims of SCIMP

- Co-ordinate activities which use IM&T to support the clinical process
- Encourage use of IM&T in the consultation where there is potential to improve the effectiveness of the clinical process
- Provide advice to encourage common clinical coding across Scotland
- Enable the implementation of guidelines
- Represent the interests of primary care users

comparative purposes. This approach would produce inevitable information chaos. The practical realities of an electronic health record (EHR) or electronic patient record (EPR) are dependent upon some shared understanding and practical implementation of standardised data recording. If an amalgamated approach is successful, there will be an opportunity to collect information about disease management in primary care on a previously unprecedented scale.

The mechanism for collecting and extracting this information has already been developed by the PCCIU (Primary Care Clinical Informatics Unit) at Aberdeen University. Data can be extracted electronically from every practice using an electronic questionnaire, and collated by the PCCIU to produce reports for both practices and local health care co-operatives (LHCCs). Anonymous information from practices is collected electronically twice yearly, and data including morbidity, prescribing, health promotion, clinical governance and outcome are analysed. In the first year, information from over two million patients was returned, and this figure is likely to increase as more practices participate.[7] The SEHD has recently agreed that participation will satisfy data collection requirements for chronic disease management payments.[8]

SCIMP and SPICE will continue to develop and promote a national primary care core morbidity dataset and to report on its accuracy and completeness at practice, LHCC and primary care trust levels. The information will form the basis of a huge research resource, and the potential database that can be produced in this way is enormous in size and potential. Information on this scale could be used for research, service planning, health needs assessment and performance management. Used wisely, data will encourage clinical effectiveness but, in the hands of the uninformed or the unscrupulous, they could be damaging. It is vital that we act responsibly and ensure that information is only used for the purposes of education, research, and the improvement of standards and patient care. The confidentiality of individual patient data is assured through anonymisation and encryption but guidelines on the allowable uses of non-identifiable and anonymised data need to be urgently agreed, in line with data protection recommendations and NHS accreditation including the views of Caldicott and the General Medical Council (GMC).[9]

Read codes

Achievements

It is essential to establish a core set of codes by which diseases and their management could be recorded consistently. Most software systems currently used in Scotland use Read version 2 to record morbidity and management. Many groups and individuals have already spent large amounts of time developing sets of Read codes for practice use, including minimum datasets for chronic disease management such as diabetes and asthma. SCIMP has amalgamated them electronically and compiled a list of 800 codes. This was published on the SCIMP page on the CEP website at: www.ceppc.org/scimp, and the top 300 codes published in hard copy and sent to every practice in Scotland. The SCIMP webpage acts as a resource for clinicians needing to access information about coding, and a forum for those wishing to contribute to the debate.

Problems

Previous attempts to establish a national coding set have not met with success for the following reasons: there were arguments for both minimum sets which included only common or potentially serious problems, and for maximum data which would identify morbidity patterns within the practice population. Initial coding at practice level relied on retrieving diagnoses retrospectively from patient notes, sifting through hospital letters, or from the patient's personal recollection.[10] The resulting data were frequently flawed and inaccurate, with inconsistencies amongst different practice members. The only solution is to agree the same level of detail to be used, and agree on terminology and coding for each medical condition, otherwise the collected data will be meaningless for comparison with other patients, other practices or other regions. Most doctors regard the recording of information as a pointless exercise, unless there are clear benefits for patient care, and until the introduction of clinical governance, there has been no compulsion to record morbidity data at all.

The future

For the first time, the users of all the clinical systems used by Scottish practices (GPASS, EMIS, Exeter, Torex and Vision) have shared common objectives.

There is a commitment to agree on standards for Scottish protocol-based referrals, which will form the core for development of electronic links between primary and secondary care referral letters and discharges. The Scottish Executive is currently piloting two major projects, Electronic Clinical Communication Initiative (ECCI) and Scottish Clinical Information (SCI), which are IT developments to link primary and secondary care by electronic referrals and discharges, direct booking for outpatient appointments, and asthma, diabetic and coronary heart

disease shared care programmes. SCIMP will provide clinical input to the projects at national level, and encourage integration of all initiatives in order to ensure that GPs will be assisted by IM&T in delivering high standards of patient care.

There is an increasing emphasis throughout the United Kingdom on managed care delivery in which patients can expect the same standard of practice wherever they may live. The parameters of care are being defined, both by clinical guidelines, and also by governments via the vehicles of the National Institute for Clinical Excellence (NICE), the Commission for Health Improvement (CHI) in England and Wales, and the Clinical Standards Board for Scotland (CSBS). Revalidation of clinicians is also imminent and, although the precise mechanism for this is not yet defined, there is no doubt that it will involve some assessment of quality of care. Knowledge and expectations amongst the public are increasing, due at least in part to the ability of patients to identify best clinical practice using electronic information systems such as the Internet. It is clear, therefore, that there is an increasing need for information systems to support evidence-based management of chronic disease and to monitor the performance of the clinicians involved. Moving towards an EPR and an EHR will only be possible with convergence towards common datasets and standards. The ultimate challenge is to agree core data items for sharing between primary and secondary care. An explosion of different, uncontrolled and locally customised third party developments within primary care will effectively destroy the potential for core information planning and a huge opportunity will be lost.

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Appendix

The SCIMP (Scottish Clinical Information Management in Primary Care) Group consists of the following members:

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Dr Colin Brown, SGPC (Scottish General Practitioners' Committee)
Dr Hugh Whyte, Scottish Executive
Dr Ken Brotherstone, Scottish Executive
Dr Peter Wiggins, National Vision User Group
Dr Peter Kiehlmann, EMIS User Group
Dr Malcolm Campbell, RCGP Director of Quality Initiatives
Dr Bob Milne, PCCIU (Primary Care Clinical Informatics Unit)
Mr Martin Irving, Development Officer, SCI
Dr Patricia Donald, SIGN guidelines (Scottish Intercollegiate Guideline Network)
Ms Susan Burney, Information Statistics Division (ISD)
Dr Keith Oates, Exeter User Group
Dr Stewart Musk, Torex User
Ms Cath MacDonald, Quality Initiatives Manager, RCGP
Mr Niall Kennedy, Information Management and Technology Officer, RCGP.